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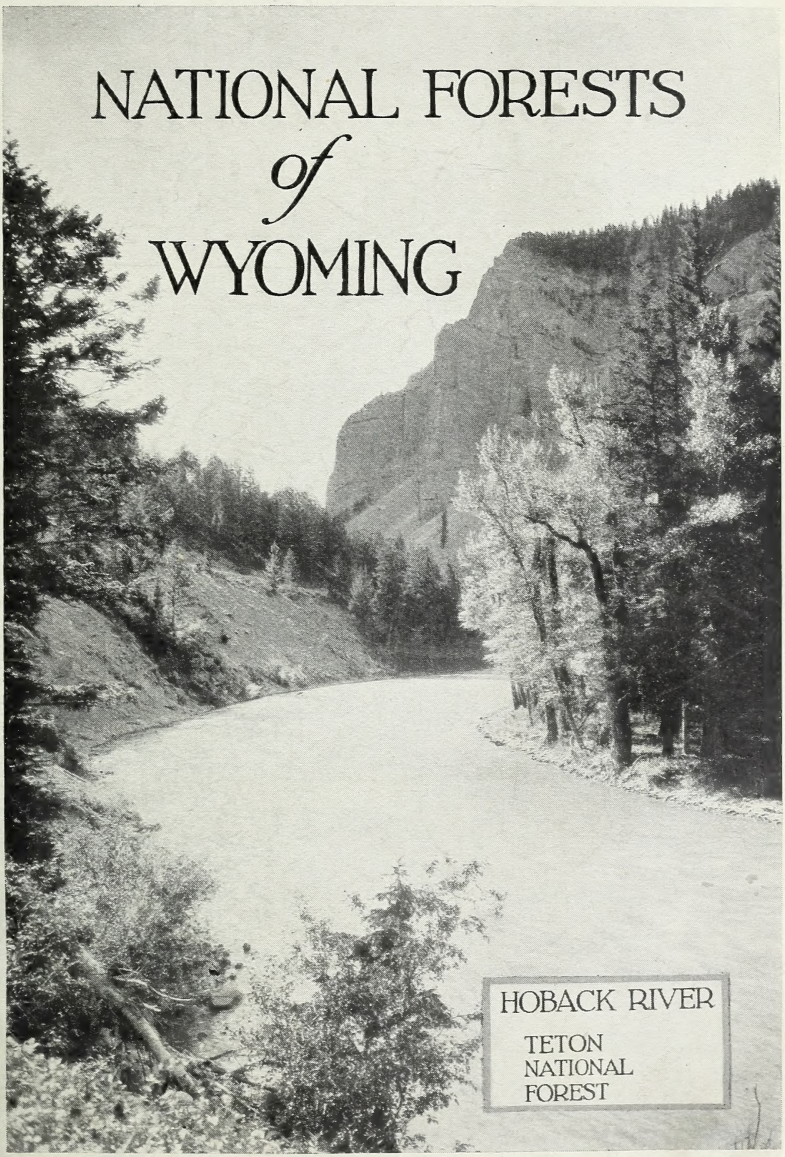
NATIONAL FORESTS of WYOMING



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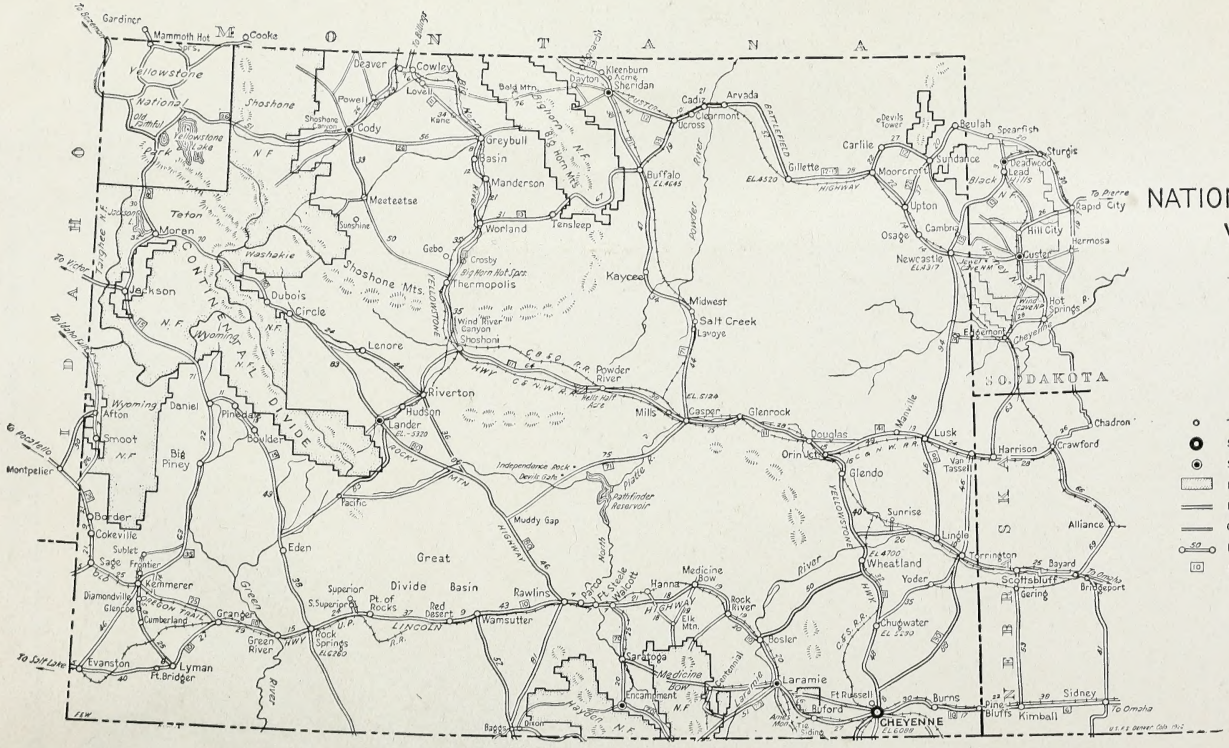

THE NATIONAL FORESTS OF WYOMING 1927

LEGEND

- TOWNS
- STATE CAPITAL
- SUPERVISORS' HEADQUARTERS
- NATIONAL FOREST BOUNDARY
- MAIN MOTOR HIGHWAYS
- OTHER MOTOR HIGHWAYS
- 50 ROAD DISTANCES
- 10 STATE HIGHWAY NUMBERS

NATIONAL FORESTS OF WYOMING

Prepared by the Rocky Mountain and Intermountain Districts of the Forest Service

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Wyoming's national forests cover, altogether, more than 13 per cent of the entire State. They are all high up, in the back country—rugged and remote. Nevertheless, far from being merely wildernesses, they are productive units of land where practical use is being made of nature's ceaseless, silent building of wood.

North, east, south, and west—there are national forests on all sides of Wyoming. They contrast sharply with the treeless plains below. In the forests grass and weeds grow luxuriantly, wild flowers abound, the air is moist, streams are numerous, rains are frequent, and snow and ice linger at the higher elevations from one winter to the next. Here are "wood and water" which are both used and perpetuated.

SOUTHERN WYOMING

MEDICINE BOW NATIONAL FOREST

In the extreme south, about midway between Nebraska and Utah, is the Medicine Bow National Forest. Long before the Oregon Trail was blazed through Wyoming, "Medicine Bow" was the scene of the red man's annual bow-making festival. From this gathering, according to one legend, comes the name which has attached itself to landmarks for miles around. Here the braves from many quarters came together to cut mountain mahogany, which grows in great abundance along the streams in these hills and was highly prized throughout the region for bowwood. Here the Indian found also a species of pine tree growing in even, dense stands, and growing straight and tall and very trim. Where it was overcrowded it was small—just right for tepee poles. So he called it lodgepole pine. It filled an important place in his domestic economy. To-day the white man cuts from the same forests saw logs and railroad ties—less romantic perhaps but no less important than bows and lodge poles.

Ever since the region was first settled by the white man Medicine Bow timber products have been in demand throughout southern Wyoming. The rails of the Union Pacific which led to the point where the golden spike marked the final link in our first transcontinental railroad were underlaid with Medicine Bow railroad ties, and to-day, for miles each way from Laramie, the forest headquarters, the tracks are laid on Medicine Bow ties. In addition to supplying employment for many men in the woods, the ties from the

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FIG. 1.—A tie hack hewing a railroad tie in the Medicine Bow National Forest

Medicine Bow National Forest keep in operation a large treating plant in Laramie. Mine props and timbers from the region are important throughout a wide territory. And while the lumber, railroad ties, and mine timbers from the Medicine Bow Forest are fitting into the general scheme of things miles from their point of origin the national forest itself is untiringly building up, layer by layer, new supplies of wood and providing for those near by, and for many others who visit it every year, the benefit of invigorating coolness and inspiring scenery.

Fort Collins, Colo., and Laramie, Medicine Bow, and Saratoga, Wyo., are all entrances to the Medicine Bow National Forest.

Thirty-three miles west of Laramie is the forest boundary, just above the old mining town of Centennial, and 12 miles farther on is the foot of Medicine Bow Peak. From here a foot trail 2½ miles long goes up to the fire lookout station on top. The lookout station gives a commanding view of the whole forest area of over half a million acres, and the lookout guard's knowledge of the surrounding country will help in picking out the important points within view and in understanding the significance of the activities on the forest.

Immediately at the foot of Medicine Bow Peak are signs of old burns, but they are small and are soon lost in the continuous expanse of deep green, unscarred forest, which stretches away in every direction. Below, over to the west, the solid canopy of the forest is broken by a fold that grows constantly deeper and deeper until in the dim distance it flattens out and merges imperceptibly into the surrounding greenness. This fold is North French Creek, thickly timbered all the way to the forest boundary. A little to the left is South French Creek, and around to the south are the many branches of Douglas Creek, the upper courses of which are marked by gentle depressions in the rich green carpet that extends on and on across the line into Colorado as far as the eye can reach. Ties cut on Douglas Creek are floated down to the North Platte River and then down the river to Fort Steele, where they are landed and shipped to Laramie for preservative treatment and distribution. The experienced eye of the lookout guard picks out a hill many miles due south as a point that marks the location of Foxpark, where most of the tie operations are concentrated. Ties are shipped from there to Laramie over the Laramie, North Park & Western Railroad.

Most of the ties produced on the Medicine Bow are hewn out by hand. Because of the small diameter and slight taper of the typical lodgepole pine (see p. 2) ties can be made by merely slabbing two sides of the tree, peeling the rest, and then cutting it into 8-foot lengths. Woods workers skilled in the use of the broadax can hew "faces" which for smoothness might have been planed. And they work with speed too, turning out regularly 25 to 30 ties a day.

In sales of lodgepole pine for ties on the Medicine Bow Forest, trees too large or to rough for tie making are sawed into lumber. In some instances very small portable mills replace the chopper in making ties. This is the case chiefly where the stands are exceedingly scattered or are made up of trees which, because of form, are not suitable for hewing.

East of Medicine Bow Peak lies Laramie, and beyond, across the plains, is a ridge, hazy because of its distance from the lookout tower. It is the Pole Mountain Military Reservation, recently added to the Medicine Bow National Forest for peace-time administration as a forest unit. It is also a Federal game refuge, like Sheep Mountain, between Medicine Bow Peak and Laramie.

After a complete survey of the forest from the vantage point of the lookout tower on Medicine Bow Peak we are not surprised at the statement that the whole stand of timber on the forest is estimated at more than 4,000,000,000 board feet. This is an imposing figure, so imposing that it is not easy to grasp its significance. The

lookout guard makes it easier by telling us that this stand of timber is capable of producing more than 2,000,000 railroad ties every year, perpetually, or half again as many as are needed for annual replacements on the Union Pacific Railroad. From this amount of wood, 4,000 modern frame bungalows could be built. It is worth $10,000,000 on the stump.

FIRE PREVENTION

"It will burn, too, if we give it a chance. My job," says the lookout man, "is to see and report smokes that indicate fire. Knowing the country, I can locate them pretty closely—better than if I had to depend on map and fire finder alone. Rangers are always on a hair trigger for fire during the dry season. It is important to know where the mills, camps, and railroad tracks are, in order to avoid false alarms. This is especially worth while, for it takes more time to make a run in the timber than it does in town. A good telephone system insures quick communication, and a large force of volunteer cooperators guarantees protection for nearly every acre. Our cooperators fill a place no salaried organization could fill. Of course they are paid for the time actually spent on fires."

For every ranger district there is a fire-fighting organization, which functions in much the same way as a volunteer fire department in a small town. The details of this organization are fully set forth on the fire-organization chart, posted by the telephone in every ranger station. On the chart is a list of the cooperators; each assigned the rôle for which he is best fitted—foreman, truckman, cook, axman. Each one knows his place, his responsibility, and his rate of pay. In every community there are a few men designated as keyman, who take the responsibility of receiving fire reports in the ranger's absence and of organizing crews and handling fires until relieved by some forest officer. The general public may not realize what the faithful work of these men means, but many a serious disaster has been averted by their timely action. The carelessness of the tourist or camper seems doubly contemptible in comparison with these heroic efforts.

Caches of fire tools are kept at ranger stations, at settlements, and in the conspicuous red boxes along the roads and trails, always ready for use at a moment's notice.

Every member of the forest force spends a great deal of time in perfecting fire-fighting plans and the fire-fighting organization, and in keeping tools and equipment in first-class shape for immediate use. In addition to reducing fire hazard through educational work, they take the initiative in fire-hazard studies and in the construction of fire-prevention improvements, which include a large mileage of telephone lines and trails.

Scattered about the forest are many summer cabins and camps. The cool nights and bright, warm days of summer in the Snowy Range draw many visitors who like to fish and hike and be out-of-doors. The unusual accessibility of this range, together with its resorts and near-by ranches, makes it a popular summer place. During the summer there are also many men in the forest tending herds of cattle and sheep.

Other activities on the Medicine Bow Forest are just as interesting as those here discussed. In fact, all the activities described later in connection with the other forests of the State could also be found on the "Bow." Each of the other forests, however, may best be seen through some line of work which is especially important there, though, of course, it must be remembered that each forest has a variety of resources and uses.

HAYDEN NATIONAL FOREST

Also in southern Wyoming, across the upper North Platte Valley to the west of the Medicine Bow National Forest, is the Hayden National Forest. The Sierra Madre Mountains of the Hayden are

F–50356–A

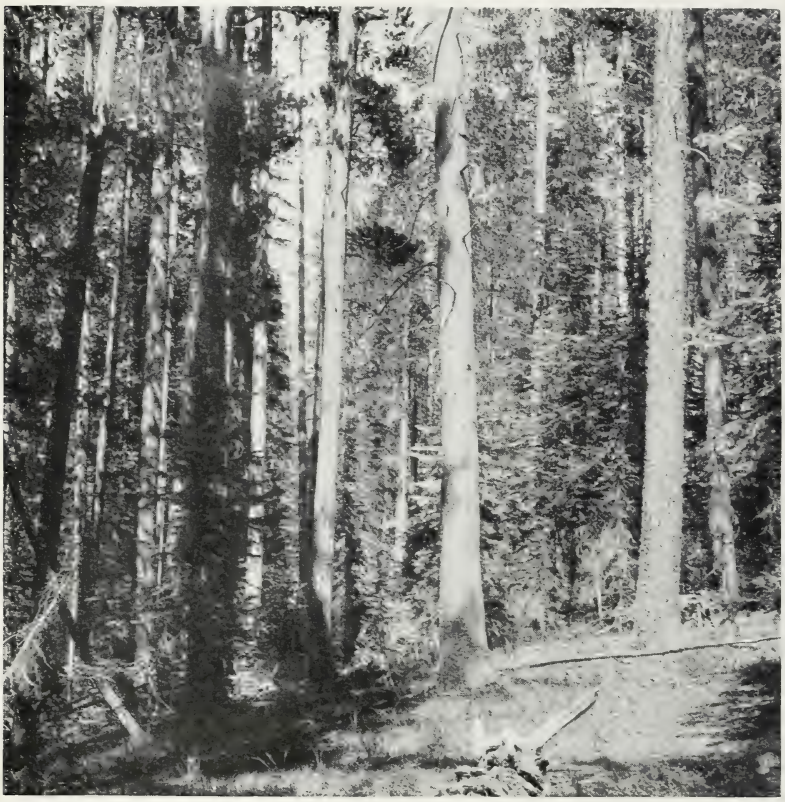
FIG. 2.—Camp Fire Girls at Brooklyn Lake, Medicine Bow National Forest

the northernmost extension of the mountainous Continental Divide in Colorado. At the northern boundary of the Hayden Forest, the Sierra Madres slope gently down into the broad, level plain of the Great Divide Basin, where accurate surveying instruments are required to find the exact line between Atlantic and Pacific slopes.

The Hayden covers about 400,000 acres, a little of it in Colorado. There are some fine stands of lodgepole pine and Engelmann spruce in the upper (south) end. A great deal of this region, which makes up the Encampment and Big Creek watersheds, was cut over very heavily for ties and lumber before the establishment of the old Sierra Madre Reserve (as the Hayden was first called), but on much of it a very thrifty second growth which promises rich yields in the future is now coming in. Extensive uncut areas show the quality

of the original stands and constitute a resource of impressive proportions. Some really distinctive recreation areas are found here. A part of their distinctiveness consists in the fact that many of their attractive lakes and streams are hidden away and are at the disposal of only the few who like horseback travel and hiking. Battle Lake, however, is accessible to motorists.

From this high, rugged section the forest slopes down gradually toward the west and northwest into a less mountainous type of country. On the map of this part of the forest are shown such towns as Copperton, Rambler, and Battle, which are now only



F-189141

FIG. 3.—Timber on north fork of Snake River, Hayden National Forest

the ghosts of earlier settlements once prosperous and busy, when the discovery of rich copper-ore deposits introduced this region to the world. Most of the Hayden lies in this lower, less rugged country.

Although administered for future forest development, much of the forest is chiefly valuable at present as watershed protection. It also produces considerable forage. Nearly 7,000 cattle from Snake River and about 100,000 sheep from the desert found grazing grounds here in 1924, on small natural openings in the timber (known locally as parks), open stands, potential timberland de-

nuded by fire before the days of forest administration—unfortunately there is much of this—and large parks and meadows above timber line. Unutilized, this forage, like the timber, would become not only a loss but also a fire menace, especially after it is killed by early autumn frosts. A certain portion of it must be reserved for the support of the wild game which have always made these regions their home—at least during the summer months. The wild game eat comparatively little, however, and leave most of the forage untouched.

GRAZING

By far the greater part of the forage on the Hayden, like that on other national forests, is available for the grazing of livestock. Through this activity a very important local economic need is satisfied. The producing capacity of the western stock industry is

F–179029

FIG. 4.—Sheep in good forage on the lower part of Smith Creek, Hayden National Forest

increased to the extent to which the forest ranges supplement the hay raised on the ranches for feeding. The use of the national forest grazing grounds during the summer months not only increases producing capacity, but it also enables the rancher to "turn out" and carry his livestock with less personal supervision during the season when his attention is required for the cultivating and harvesting of crops. He may pool his interests with neighboring ranchmen and hire a range rider for the season, or he may alternate with other owners in riding, each owner in turn looking after the combined herd. Topographic barriers tend to discourage drifting, and where they are absent it is often possible to close up small gaps with drift fences.

The successful handling of stock on this and similar remnants of the old open range is a highly specialized line of endeavor and involves uniform ultilization of the forage and the prevention of losses from straying, poison, and storms. The Forest Service is

charged with the responsibility of administering the range as a public property, and in order to do this effectively it must carry on research which will enable it to guarantee the permanence of the range and prevent damage to forest reproduction.

The Wyoming National Forests pasture 125,000 head of cattle and horses and 575,000 head of sheep annually during the summer months, supplementing the feed supply of about 1,200 stock growers, most of whom are also local residents and property owners. A preferential system of allotting the range is followed by the Forest Service, whereby the temporary, speculating, or nonresident (Class C) owner must give way to the stockmen who are also local landowners, and whereby the large owner, even though local (Class B) must reduce within certain guaranteed limits for the small owner (Class A) in case the range becomes crowded. Use of the range prior to the establishment of any forest is also the basis for a preference on that range. On the Hayden, however, it was necessary to transfer some of the prior use preferences to near-by forests in Colorado to relieve the range from overcrowding. A regular or preference permit is binding on the Government for 10 years and amounts in reality to a contract. A fee for each head of stock is charged for all animals grazed, except a limited number kept by settlers, prospectors, and travelers for noncommercial purposes.

WESTERN WYOMING

Northwest of the Hayden National Forest, across the Red Desert, the Continental Divide again becomes mountainous. In this form it nearly parallels, with its many spurs, the western boundary of the State to the southeast corner of Yellowstone National Park, where it again takes a more westerly course. The entire mountainous region here is covered by national forests; the Wyoming and the Teton on the west side of the mountain range, extending to the south boundary of Yellowstone Park, and the Washakie and the Shoshone on the east side, the latter adjacent to the park along its eastern border.

These national forests have so many characteristics in common that, in many cases, what may be said of one applies to all. It is a vast, rugged region where many of the boundary lines are little more than devices for distributing equably the responsibility of administration. Nevertheless, since these lines are in most cases drawn along bold topographic features which separate major watersheds, each unit has points of especial interest which justify individual description.

Every summer many travelers enter this region in search of "nature" unspoiled. And they are plentifully rewarded, for "nature" is the dominant characteristic of the whole vast expanse. Within the forest boundaries roads are infrequent, and settlements are small and scattered; but outside, in the surrounding valleys, they are numerous enough to offer ample hospitality to the traveler. The higher country is rough and utterly unsettled.

WASHAKIE NATIONAL FOREST

The southeastern portion of this great, broken upland is known as Washakie National Forest. It is named after Chief Washakie

of the Shoshone Tribe of Indians, who spent his life among its mountains and on the adjacent plains and was ever a friend of the white man. On the map this forest has very much the shape of a reversed question mark in which the "dot" is separated from the hook by a corner of the Shoshone Indian Reservation.

Although this southern section, known as the Lander Division, was practically stripped of its old trees by fires many years ago, when the adjacent plains country was first being settled, it is still covered with forest growth sufficient for watershed protection.

The greater portion of the much larger northern division, drained by many tributaries of Wind River, is well timbered at the lower and middle elevations with lodgepole pine, the predominant timber type in the State, which gives place gradually, as a higher altitude is reached, to Engelmann spruce, alpine fir, and limber pine. Many of the creeks, however, which flow into Wind River from the south drain a rocky region in which the more scattered timber stands

F–179533

FIG. 5.—One of the unnamed lakes above Brooks Lake, Washakie National Forest

are of value chiefly as watershed protection. Such stands are incidentally valuable as shelter for wild life and as a scenic setting for various forms of outdoor activity. Automobile roads penetrate some of the steep-walled valleys of these streams for several miles, but most of the region can be reached only on horseback with well-equipped pack outfits. Throughout this portion of the forest, recreation and livestock grazing are both important, but are subordinated, if it is necessary, to watershed protection.

Above the last timber-line outpost are broad mountain meadows and grass lands where bands of sheep graze around the foot of high, rugged mountain peaks that seem to touch the sky. Two of the highest of these, Gannett Peak and Fremont Peak, are on the boundary between the Washakie and the Wyoming National Forests, separating the headwaters of Wind River on the east from those of Green River on the west. In this formidable setting are several glaciers. The largest, in the head of Bull Lake Creek, possesses all the features characteristic of typical glaciers. The glaciers on Din-

woody Creek are nearly as large. Other smaller glaciers are located on Torrey Creek. This region is a veritable paradise for mountain climbers.

The Wind River Valley, all but the head of which lies outside the forest boundary, separates the northern division into two portions, one of which, the northern portion, has a great deal of merchantable timber. Up through the ranch land in Wind River Valley runs the road from Lander, the terminus of the Chicago & North Western Railroad. Another road, coming from Riverton, joins it a few miles above Fort Washakie. Where the road crosses Wind River, at the mouth of Du Noir Creek, is the beginning of the Teton Game Refuge, in which no hunting is allowed. About 7 miles farther on, the road enters the Washakie National Forest and climbs more rapidly toward Twogwotee Pass in the Continental Divide, which marks the boundary between the Washakie and the Teton National Forests.

F-159220

FIG. 6.—On one of the Bull Lake camp grounds, Washakie National Forest

Descending into Jackson Hole on the west side of the divide, this highway leads to the southern entrance of Yellowstone National Park.

LUMBERING

The notion that the Washakie is merely an impressive wilderness area is soon dispelled on a visit to the large tie operations in this part of the forest. On the upper slopes of the Wind River, 150 miles northwest of Lander, where the forest headquarters are located, is a camp of 200 to 300 woods workers, known as Du Noir. From the surrounding stands of timber are cut annually from 300,000 to 600,000 ties, which are driven down Wind River to Riverton. Here they are treated and afterwards distributed for use along the Chicago & North Western Railroad. This operation removes about 60 to 70 per cent of the volume of trees 10 inches and more in diameter on the area

cut over, and cutting is carried on on such a scale as to assure a perpetual yield.

This sale is under the constant supervision of a forest service lumberman and three timber-sale rangers. The trees to be felled are selected and marked, the cutting is directed, utilization and brush disposal are supervised, and the final products are "scaled" and charged against the deposits made by the company, all by these forest officers. This work is not merely lumbering; it is also forestry, as the resource is perpetuated through the husbanding of the crop. The timber is sold on the stump and is handled by labor provided by the purchaser.

An interesting detail in this connection is the commissary of the camp at Du Noir. It is necessary to freight in all supplies, except hay and grain, more than a hundred miles, chiefly from Lander and Riverton. The average annual hauling program includes about 1 ton of food for each of the 200 or more men. The totals for some of the

F-32409-A

FIG. 7.—Breaking a log jam on Sheridan Creek, Washakie National Forest

staples are as follows: Hay, 450 tons; oats, 225 tons; potatoes, 75 tons; flour, 50 tons; sugar, 25 tons; milk, 15 tons; canned fruits and vegetables, 30 tons.

Most of these provisions are purchased locally and are supplied by near-by communities. Their purchase is a powerful factor in stimulating business in the surrounding region. The industry which is made possible here and elsewhere by the utilization of resources in the national forests contributes consistently to community prosperity.

FOREST TYPES

Nearly 60 per cent of the timber in the national forests of Wyoming is lodgepole pine. In this forest type the individual tree is strikingly subordinated to the group or community; the characteristics of the type are those of the stand, not those of the tree. In fact, this pine rarely grows singly or in a stand composed chiefly of other species where it might have a chance to assert individual

traits. So it is always the lodgepole stand. In Wyoming these stands are expansive and monotonously uniform—usually crowded. From these habits of the type come the form and habits of the tree, slender—rarely over 18 inches in diameter, "breast high," as measured by the forester—comparatively tall—often 90 feet to the tip—and always straight, with a short, light crown. If this tree were to be renamed to-day on the basis of use it would undoubtedly be known as the "crosstie pine," for its trim form makes it ideal for the hewing of railroad ties, as does also its uniform, crowded habit of growth.

The lodgepole pine belongs, botanically, to the hard-pine group. It has two short light-green needles in a bundle and small, "lop-sided," very hard cones. The tenacity with which these cones cling to dead twigs in large numbers makes the tree very easy to identify.

Stands of the spruce-fir type, the most numerous and widely distributed of the subordinate types, contain trees of many ages and

F-188298

FIG. 8.—The 1924 tie drive in the Du Noir boom, Washakie National Forest

sizes and a considerable amount of underbrush. The appearance of such stands is equally characteristic but very different from that of the clean-bolled, even-aged lodgepole stands below them.

In sharp contrast to the lodgepole-pine type, the characteristics of the Engelmann spruce type are those of the individual imparted to the type. For this tree grows as an individual, permitting many other species to grow with it and under its shelter. Its tolerance of competition from outsiders results in great variety in the stand, usually to the complete sacrifice of the order and neatness that characterize stands of lodgepole pine. Alpine fir is a common satellite, incapable of reaching either the size or the age attained by Engelmann spruce.

Both Engelmann spruce and alpine fir may easily be distinguished from the multineedled pines of the State by their short, single needles. The sharp-pointed, stiff, four-sided needles of the Engelmann spruce, however, are very different from the blunt, pliable,

flat needles of the alpine fir. There are other easy distinctions between the two—among them, the silvery, shiny bark of the alpine fir and its habit of carrying its cones upright in the very top of the tree. Very often in the fall or winter these cones are nothing but spikes, closely resembling Christmas candles, for, unlike all other conifers, the cones of the true fir trees shed their scales much as deciduous trees shed their leaves.

Engelmann spruce grows up as far as timber line, where, along the mountain tops, it takes the brunt of the endless struggle of forests to carry farther the limit of their conquests against wind and snow—defeated where a gap in the ridge gives the wind the advantage of a sweep, and undaunted where a few hardy individuals have seized a foothold in some partly sheltered nook. The many scars of conflict which these tree frontiersmen bear make them objects of curiosity and universal appeal to the traveler.

Both lodgepole pine and Engelmann spruce are interesting in their adherence to fairly well-defined zones of altitude, the former giving way to the latter between 8,000 and 9,000 feet above sea level.

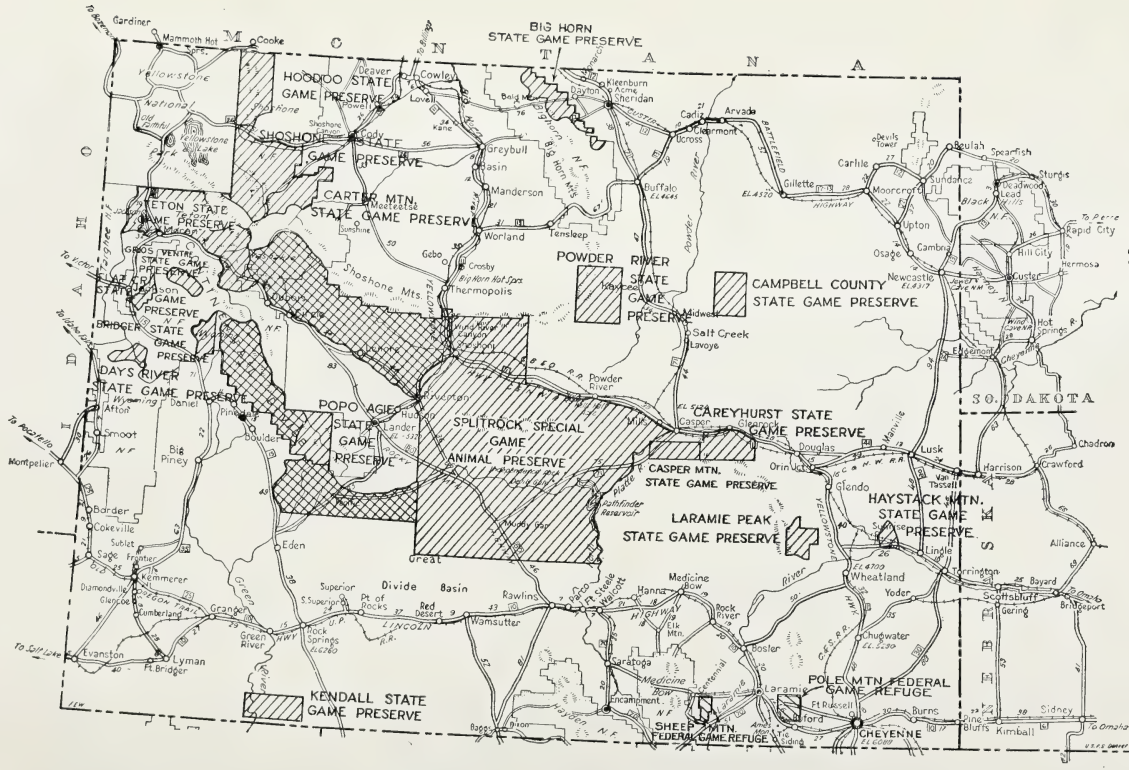
In addition to the two main forest types there are two others, more restricted in their distribution: Douglas fir and limber pine. Douglas fir occurs in very limited areas in almost pure stands in the upper lodgepole and lower spruce zones, nearly always on moist north slopes. Limber pine is found in even more circumscribed areas. At lower elevations it grows usually on exposed, rocky sites, but toward the upper limits of tree growth it occupies better sites and forms stands of higher quality. In such localities limber pine often makes up a large proportion of the weird timberline forests.

TETON NATIONAL FOREST

HIGHEST USE POLICY

The Teton National Forest is the largest in Wyoming. On account of the wide variety of uses on its different parts, it is a fine example of the Forest Service policy of "highest use." It illustrates admirably the way in which the Forest Service plans the utilization of all resources—each in its own area. For example, there are areas where grazing is prohibited in order that plenty of range may be kept for the elk. There are other areas, each small in itself, where recreation reigns supreme and timber cutting, grazing, and other uses are subordinated to recreation. Still other portions are segregated as summer range for Jackson Hole livestock, and the southern part of the forest contains large stands of lodgepole pine, which offer favorable logging chances. Each of these uses is limited to a more or less definite area. In addition, the whole forest is of very great value as affording watershed protection and furnishing water to the ranches in the Snake River Valley of Idaho.

The Teton National Forest encircles Jackson Hole like a lopsided doughnut. It occupies the mountain ranges on both sides of Jackson Hole and extends northward across the valley of the South Fork of the Snake River and around Jackson Lake. Its southern limit is the boundary of the Hoback River drainage. In general the



THE STATE GAME PRESERVES OF WYOMING

LEGEND

- FEDERAL GAME REFUGE
- ELK-PROTECTED TERRITORY
- STATE GAME PRESERVE

mountains in this circuit are not very high or rough, but they are heavily timbered—chiefly with lodgepole pine. The notable exception is the Teton Peaks, a relatively short range of high, scenic mountains lying on the west side of Jackson Hole. The division between the Teton and Targhee National Forests follows the Continental Divide, of which this range is the backbone. The streams on the eastern slope of Teton Peaks have eaten back on the divide between the mountains so far that at present these peaks are no longer on the main ridge, but lie entirely on the Teton Forest, considerably east of the boundary line. These bold mountains have perpetual snow on their peaks, and their tree growth, even on the lower slopes, is valued less as timber than as watershed protection.

F-150313

FIG. 9.—Looking into Jackson Hole from the summit of Teton Pass—Coming in from the east (Teton-Targhee line)

North of Jackson Hole, along the Snake River and its tributaries, is a rolling, typical lodgepole pine country. Practically all the area north of the Buffalo River and Jackson Lake is within the State game preserve. There are also two other game preserves farther south on the Teton Forest. On these areas only a very limited amount of grazing is permitted. West of Jackson Lake and in the vicinity of the Teton Peaks are a number of smaller lakes having an outstanding value for recreation. They are very accessible and exceedingly beautiful, and will be treated by the Forest Service as a recreation area.

South of the Buffalo River the grazing value increases. Jackson Hole is an old-time cattle country and depends largely on the national forests for summer range. About 20,000 head of sheep also graze in the extreme south end of the forest.

Surveys recently completed on the Hoback River show that a large number of ties can be cut from the timber there. The logical means of utilization is to drive these ties down the Snake River to a shipping point in Idaho.

In general the Hoback River country is not particularly mountainous; the lower part of the stream canyons up, but toward the summit it spreads out into a grassy, open country covered with sagebrush, in which there are a number of scattered ranches. At the head of the Hoback River there is a scarcely perceptible divide between it and the headwaters of the Green River tributary. Farther north the divide becomes higher and much more mountainous, and the main ridges dividing the various streams that run into Jackson Hole are likewise higher, the Gros Ventre Range in particu-

F–150319

FIG. 10.—The Tetons from the upper part of Jackson Hole—at the extreme right, Mount Moran cut in two—Teton National Forest

lar; but they are not cut up into spectacular peaks like the Tetons. Jackson Hole itself is probably an old lake bed, in which the Snake River has now entrenched itself to the depth of a hundred feet or so. Because of the coarse, gravelly soil and the high elevation, crops are pretty well limited to hay and cattle. Much of Jackson Hole, especially the northern part, is uncultivated and consists of stony or gravelly flats covered with grass, and, in places, sagebrush.

The small portion of the Targhee National Forest lying in Wyoming is enough like the Teton not to require separate description.

WYOMING NATIONAL FOREST

The Wyoming National Forest includes two areas which for many years were administered as separate forests—the Wyoming and the Bridger. This combination, all of which is now called the Wyo-

ming National Forest, lies like a broken horseshoe around the headwaters of the Green River. The eastern side of the horseshoe extends only up to the top of the Wind River Range, of which the Washakie National Forest occupies the eastern slope. Both the east slope and the west slope of the Salt River Range lie within the boundaries of the west side of the forest. The west slope of this range reaches down to Star Valley and drains into a tributary of the Snake River.

The two mountain ranges making up the two sides of this forest are rather different in appearance. The eastern side of the forest is much like the rugged country in the Washakie, the large ice fields and glaciers so conspicuous on the Washakie extending over onto the Wyoming. The main mountain crest is cut up into little peaks, and slopes off fairly rapidly to the valley of the Green River, a

F-192731

FIG. 11.—Cut-over tie-sale area on Cottonwood Creek, Wyoming National Forest

high, open, flat valley covered with sagebrush and scattered ranches, most of which are devoted to hay raising.

Near or just within the boundaries of this east side of the forest are a number of lakes which have a good deal of recreational value. The Green River Lakes are famous for their beauty; the others are perhaps less striking but rather more accessible. New Fork Lake, in particular, is much frequented, not only by local people, but by organizations such as the Boy Scouts from as far away as Rock Springs, Kemmerer, and Green River City.

The canyons are rather short and steep in these mountains and the timber units are not particularly valuable, although there is a good deal of lodgepole pine scattered through this forest.

The mountain range which forms the west side of the forest is much broader than that on the east. Greys River, rising well toward the south, drains almost its entire length. Several lesser streams drain from the headwaters of this river southward to the

south boundary. This divide is not nearly so high and precipitous as is the main Continental Divide, across Green River Valley, and the

F-195128

FIG. 12.—New Fork Lake, Wyoming National Forest

tributary streams coming down to the Green River on this side are all bordered by extensive stands of lodgepole pine. The logging situation is good, and a large lumber company is now making a circuit along the eastern slope of this portion of the forest. The Green

F-190030

FIG. 13.—The boundary of the Wyoming National Forest on the Star Valley side skirts these hills

River working circle, which includes the Wyoming Forest as well as the parts of the Ashley and Wasatch on streams tributary to the

Green River, is managed under sustained yield—the ultimate goal of forest management—and produces railroad ties for the Union Pacific Railroad. The broad, plateau-like top of the Salt River Range provides good forage for cattle and sheep. The steep slopes on the west side of the range extending into Star Valley contain bodies of timber which are more scattered than are those on its east side, or in the Greys River region to the north.

There is considerable demand from Afton and the other towns in Star Valley along the Idaho-Wyoming line for timber from Wyoming National Forest. This is a rather fertile, though elevated valley, and is fairly well populated. Dairying has been devoloped there, and a number of successful creameries are in operation. This valley also gets part of its timber and large quantities of firewood from the Caribou National Forest, on the opposite side,

F–20479–A

FIG. 14.—Cattle grazing on a small meadow in Lower Pole Creek range, Wyoming National Forest

SHOSHONE NATIONAL FOREST

in Idaho. Most of the lodgepole pine, however, comes from the Wyoming National Forest.

The Shoshone was Buffalo Bill's country. Names of places and things all the way from the town of Cody, the forest headquarters, which is named after him, to Pahaska Tepee, his old hunting lodge, 50 miles up the North Fork of the Shoshone River, keep fresh the memory of this famous scout. Hosts of people drive up the park road from Cody, and many spend their summers among the more remote timber stands on the Shoshone National Forest.

The Shoshone National Forest slopes eastward from the Absaroka Range and Yellowstone National Park toward the Big Horn Basin. Five good roads radiating from Cody cross or extend up into the forest at fairly regular intervals, following the main stream courses. The forest is so vast, however—it covers an area of more than a million and a half acres—that these roads give automobile access

to only a relatively small portion of the forest. The intervening stretches are broken and rugged, although of no great altitude.

Timber development on this forest has been slow on account of the character of the country and its comparative inaccessibility to markets. But the timber "also serves" by waiting. Within a few years timber products from the Shoshone will undoubtedly be filling their place in local, if not distant markets.

The Shoshone National Forest is also important because of the protection it gives to watersheds. Within its boundaries are the headwaters of the Shoshone River, the Greybull, and Clarks Fork of the Yellowstone River. As a background for the many interesting geological formations in this region the stands on this forest add much to the beauty of the landscape. But far more important is the deterring effect of their spreading roots on the eroding action of wind and flowing water assaulting the steep slopes and the retarding effect of

F-190095

FIG. 15.—Greys River, near the end of the road, in the Wyoming National Forest

their spreading branches on the melting of snow. At timber line the bizarre witch tree renders this protecting service, constituting what is known as a protection forest. At somewhat lower elevations timber-producing stands protect the mountain slopes. The plan according to which timber sales are cut out on the national forests in no way impairs the effectiveness of the forest cover for watershed protection.

Those using water from the forests want it to be clear and steady in its flow. Both these requirements the forests help to fulfill. By holding the soil in place on the mountain sides they keep the water clear, and by delaying the run-off of spring rains and melting snow they tend to equalize the volume of water available throughout the year. Were it not that the forests act thus as soil binders, erosion might go on unchecked; the water in the streams would be muddy; the reservoirs, pipe lines, and ditches would fill up with silt. Fertile soil would be washed away from the mountain sides, thus depriving them

of their forest-producing possibilities, and the silt would cover the more fertile soil in the valleys and curtail or destroy their productivity.

At the confluence of the North and South Forks of the Shoshone River is the large Shoshone Reservoir. The water in this reservoir is backed up by the huge Shoshone Dam built by the United States Reclamation Service. It took five years to complete this engineering achievement. The dam impounds the flow of these two large streams for distribution among the fields of the lower valley, serving in all about 100,000 acres.

Through this and other projects, some as yet only proposed, the rivers of the Shoshone National Forest may eventually irrigate some 200,000 acres of what would otherwise be sagebrush land.

There is more than a million acres of such land in the plains adjacent to the Big Horn and Yellowstone Basins, having favorable soils and potential farm value if water can be made available for irrigation. The importance of preserving the forest cover where it exists and extending it to other nonproductive mountain areas is therefore obvious. The future prosperity and agricultural development of the region are limited only by the amount of water that can be supplied for irrigation by the streams, many of which rise within the Shoshone Forest.

These streams also provide drinking water for several towns and many ranches, especially those in the western part of the Big Horn Basin. For this use the water must be pure. Therefore, in the management of this and all other national forests where domestic water supplies are involved, other uses of the forest are so adjusted as to insure the water against pollution. This often requires special regulation of grazing, camp sites, summer homes, resorts, and sawmills.

Anglers delight in these forest streams, in which they find ample opportunity to pit their skill and patience against the wiles of the wary trout. Many of the less accessible streams and lakes offer a sure catch, but others, especially those along the auto roads, have been pretty well "fished out." The problem of keeping the streams stocked is becoming acute on almost every forest.

In an endeavor to keep them stocked, the streams depleted by the hordes of motor fishermen are planted with fry hatched in the State fish hatcheries and the Federal hatcheries at Yellowstone National Park and Bozeman, Mont. By means of cooperation between the Forest Service and many local groups of fishermen, 2,800 acres of fishing lakes and 300 miles of streams in the Shoshone are planted with such fry.

GAME PROTECTION

The Forest Service is deeply concerned with the protection of game in this region. This involves not only the protection of the animals themselves but also setting aside for them suitable winter and summer range. Almost any area classified as forest land contains, in its high, inaccessible portions, plenty of summer range for big game. Because of the excessive snow in such places, however, during the winter, nearly all the game has to migrate to lower altitudes, where the precipitation is lighter and the stronger winds help

to keep the ground bare. But most of the land at the lower level is also good for ranching and, accordingly, has been preempted for that purpose. This leaves, especially to the elk and deer, the rather desperate choice between death from the hunter's gun in the valley, or starvation in the snowdrifts of the mountains. Of four main game ranges on the Shoshone, only one, the South Fork, requires supplemental winter range. Game protection on the Shoshone varies from game protection on the average forest and deserves special mention only in so far as it is distinguished by this remarkable area of the all-important winter range.

Grazing is regulated in many places or excluded entirely in order to protect the game, especially on Elk Fork and Sweetwater, Horse, and Grizzly Creeks. Several refuges have been designated where no hunting is allowed, even with a license. These have recently been consolidated into two refuges, known as the Hoodoo and the

F—37504—A

FIG. 16.—A summer home in the Shoshone National Forest, just off the Cody Road, not far from Home Lodge

Shoshone, comprising in all more than half a million acres. They are shown on the map on page 14.[1] It will be notedi that similar refuges are scattered throughout the other national forests also. As a result of these provisions and peculiarly favorable conditions on the Shoshone, an unusual number of different kinds of game live within its boundaries and the number is increasing. There are elk, moose, mountain sheep, antelope, mule deer, and black, brown, and silver-tip bear. Among the fur-bearing animals are beaver, fox, marten, mink, badger, ermine, and otter; among predatory animals, coyote, wolves, lynx or wild cats, and mountain lion. These predatory animals are very destructive to the more valuable game animals and are being reduced in number by systematic killing. It is estimated that during 1925, predatory animals killed over a hun-

[1] The exact boundaries of these refuges are changed frequently and may vary from those shown on the map.

dred deer on the Shoshone National Forest, in addition to elk and mountain sheep. As deputy game wardens, forest rangers assist State officers in enforcing the State laws which are designed to preserve the remnants of wild life left from the days of the frontier hunter and the unfenced range.

NORTHERN WYOMING

BIGHORN NATIONAL FOREST

South of the Crow Indian Reservation and across the Big Horn Valley from the Shoshone National Forest lies the Bighorn National Forest, an area of more than 1,125,000 acres extending 80 miles in a southeasterly direction from the Montana-Wyoming line along the Big Horn Mountains. This is a wild stretch of country where game abounds in natural haunts that have been the home of their ancestors for uncounted ages. This region was a famous hunting ground of the Sioux, Crow, and Cheyenne Indians before the coming of the white man, and was the scene of many bloody battles in early Indian campaigns.

The Big Horn Peaks, which rise more than 13,000 feet above sea level and mark the crest of the forest, were objects of veneration in the religious life of the Indians. Back into those rugged, snow-capped, enveloping solitudes the prehistoric American went to make or find his "medicine". Relics of these rites remain to pique the imagination of those wandering over these mountains to-day.

Just as the mountains are the backbone of the region geographically, the resources of the national forests have come to be the backbone of the region economically. Because of the close relation between forest ranges, timber, and water and surrounding ranches, this forest is regarded locally with a great degree of proprietary interest. Individuals and organizations cooperate freely and generously in developing improvements which increase the usefulness of the forest resources, and support a volunteer fire-fighting organization which is of the greatest importance in keeping out forest fires. Such understanding is of more than casual value to the Forest Service in its work. The development of the timber industry on a large scale will come eventually and when it comes, in addition to providing for the harvesting of a large annual growth of timber, will contribute in still other ways to the economic prosperity of the surrounding towns.

It is part of the policy of national forest administration to make the various forest units community assets as well as national assets. The grazing facilities of the forest have been handled in such a way that they have become an essential factor in the livestock industry, which for years has been of major importance in this locality. In all, probably 400 ranch owners depend on the Bighorn National Forest for summer range. The forest also furnishes a considerable amount of wood for use on these same ranches, which, in addition, derive their water supply from streams rising in the mountains within the forest boundaries.

FOREST RECREATION

As is frequently the case, the value of this national forest as a community asset is felt far beyond the limits of the near-by valleys.

In recent years the Bighorn, like nearly all the other national forests, has been called upon for a fourth type of service. During these years the people of the United States have learned to play out-of-doors. The automobile and extensive road building have resulted in an almost universal hunt for the open. In the course of this hunt the national forests have been "discovered," and camps, summer homes, and resorts are now found in practically all of them.

F-187534

FIG. 17.—Hewing a tree with a broadax, Bighorn National Forest

Residents in the vicinity of the Bighorn National Forest are annually hosts to thousands of vacationists from all over the United States, and through their hospitality place at the disposal of these visitors a region ideally adapted to outdoor recreation. And they do it with just pride, for they have taken a personal interest in the

development of the forest and the fitting in of this use on appropriate areas so as not to conflict with the other uses of the forest. This is not restricted to the Bighorn, but is characteristic in varying degree of every national forest.

Several towns and organizations have established camp grounds and lodges. The Sheridan Municipal Mountain Park, at Woodrock, on the South Fork of Tongue River, is one of these. A large camp ground is also being improved by the Custer Battlefield Highway Association on North Tongue River, near Burgess Ranger Station, about a mile north of the Sheridan-Lovell Highway. Summer camps are also maintained in various parts of the forest by such organizations as the Boy Scouts, the State Y. W. C. A., the State Epworth

F–50500–A

FIG. 18.—Clouds Peak and Clouds Peak Lake, Bighorn National Forest

League, and various lodges. The Forest Service has also in certain instances designated special areas as camping places and has provided a few conveniences as precautions against water pollution and fire.

Two automobile roads cross the Bighorn Forest east and west, the one in the north extending from Sheridan to Lovell, and the one in the south from Buffalo to Tensleep. Most of the auto camping is concentrated along these two roads, partly because other portions of the forest are not accessible.

Recreationists find in the national forests a maximum of freedom—as much as is compatible with adequate fire protection and sanitation. Although incidental to the original purposes for which the national forests were established, such use of the forests is important and is

given due consideration in coordinating the utilization of the various forest resources.

For those who require a greater degree of permanence and "civilization" in their outings than camping affords, summer-home sites have been surveyed on the Bighorn at appropriate places along these roads and in a few other localities accessible to automobiles. These sites may be obtained under permit at nominal rentals.

"Dude" ranches in the Bighorn also attract many visitors. People of widely differing experience gain the acquaintance of the Bighorn wilderness, forest lands, hidden lakes, and inspiring peaks under the genteely primitive auspices of these institutions. They offer all of the delights of genuine roughing it without any of the accompanying inconveniences or serious hazards. Many picturesque trails provide ample opportunity for excursions with horse and pack outfits from the home ranches up into the real wildernesses. A particularly beautiful trip is that up Solitude Trail, in the course of which many lakes and other interesting places are encountered. This trail winds through about 52 miles of the Clouds Peak region and is well provided with signs and other improvements of assistance to travelers.

EASTERN WYOMING

BLACK HILLS NATIONAL FOREST

A little south of the Bighorn National Forest on the eastern boundary of Wyoming, is another, the fourth forest region in the State. It rises gradually from the sagebrush upland and changes imperceptibly until soon after going into it, one can look back over the open plains just traversed. However, most of the Black Hills National Forest lies across the line in South Dakota and may more properly be considered as part of another region.

Wyoming National Forests

Forest	Area [1] (acres net)	Standing timber (all species) M ft. b. m.	Grazing authorization		Supervisor's headquarters
			Cattle and horses	Sheep and goats	
Ashley [2]	6,460	8,208	100		Vernal, Utah.
Bighorn	1,125,632	1,359,687	31,125	113,800	Sheridan, Wyo.
Black Hills [2]	144,416	99,270	7,825	700	Deadwood, S. Dak.
Caribou [2]	6,315	2,780	100	1,200	Montpelier, Idaho.
Hayden [2]	328,124	601,635	7,400	95,000	Encampment, Wyo.
Medicine Bow	550,911	4,133,866	12,000	51,500	Laramie, Wyo.
Shoshone	1,583,986	2,284,200	11,300	90,800	Cody, Wyo.
Targhee [2]	345,570	516,044	3,500	15,900	St. Anthony, Idaho.
Teton	1,880,812	2,699,500	16,350	20,000	Jackson, Wyo.
Washakie	860,326	1,614,114	10,800	46,800	Lander, Wyo.
Wyoming	1,667,549	1,276,654	34,100	245,000	Kemmerer, Wyo.
Total	8,500,101	14,596,058	134,600	680,700	

[1] Net area excludes privately-owned land within boundaries which make up a portion of the gross area.
[2] The figures in this table apply only to the portion of the forest in Wyoming. The Ashley National Forest lies chiefly in Utah; the Black Hills in South Dakota; the Caribou and Targhee in Idaho; and the Hayden partly in Colorado.

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